# TIME SPENT ON MATHEMATICS LEARNING

*Key Findings: Canada, France, Germany, Italy, Japan, Russian Federation, United States*

*On average, formal classroom instructional time per week on mathematics learning ranged from 3.0 hours in Germany to 3.7 hours in Canada and the United States. The number of instructional weeks per year ranged from 33.5 in Italy to 39.7 in Germany.*

Using data from the student background questionnaire from the 2003 Program for International Student Assessment (PISA 2003), this indicator examines how much time students spend in mathematics learning in at-school and out-of-school settings. On average, formal classroom instructional time per week ranged from 3.0 hours in Germany to 3.7 hours in Canada and the United States (figure 11). U.S. students reported more formal classroom instructional hours per week than their French, Russian, and German peers did. Apart from hours spent in formal classroom settings, 15-year-olds in the United States spent about 30 minutes per week each in remedial and in enrichment classes (data not shown). Students from the Russian Federation reported spending close to 2 hours per week in remedial and enrichment classes combined.

Instruction in classroom settings at school, however, is only one aspect of student learning. Learning time in out-of-school activities ranged from 35 to 42 percent of students' total mathematics learning time in Japan, the United States, Canada, and France; it was 54 percent in the Russian Federation (computed from data in figure 11). U.S. 15-year-olds reported spending 2.8 hours per week on mathematics homework or other study set by teachers, less than that reported by their peers in Italy (3.5 hours per week) and the Russian Federation (5.0 hours per week).

Adding up the various time allocations, U.S. 15-year-olds reported spending 4.6 hours learning mathematics in at-school settings and 3.3 hours per week learning mathematics in out-of-school settings (computed from data in figure 11).

Since the data on instructional hours presented in this indicator refer to school weeks only, and countries differ in the number of weeks per year in which schools are open, data are also presented on the number of instructional weeks per year for six of the G-8 countries reporting data.[12] The number of instructional weeks per year ranged from 33.5 in Italy to 39.7 in Germany. In the United States, the number of instructional weeks per year was 36.0, which is more than in the Russian Federation and Italy, but less than in Canada, Japan, and Germany.

## *Definitions and Methodology*

The 2003 Program for International Student Assessment (PISA 2003) asked 15-year-olds to report how much time they spent learning mathematics at school and outside of school.

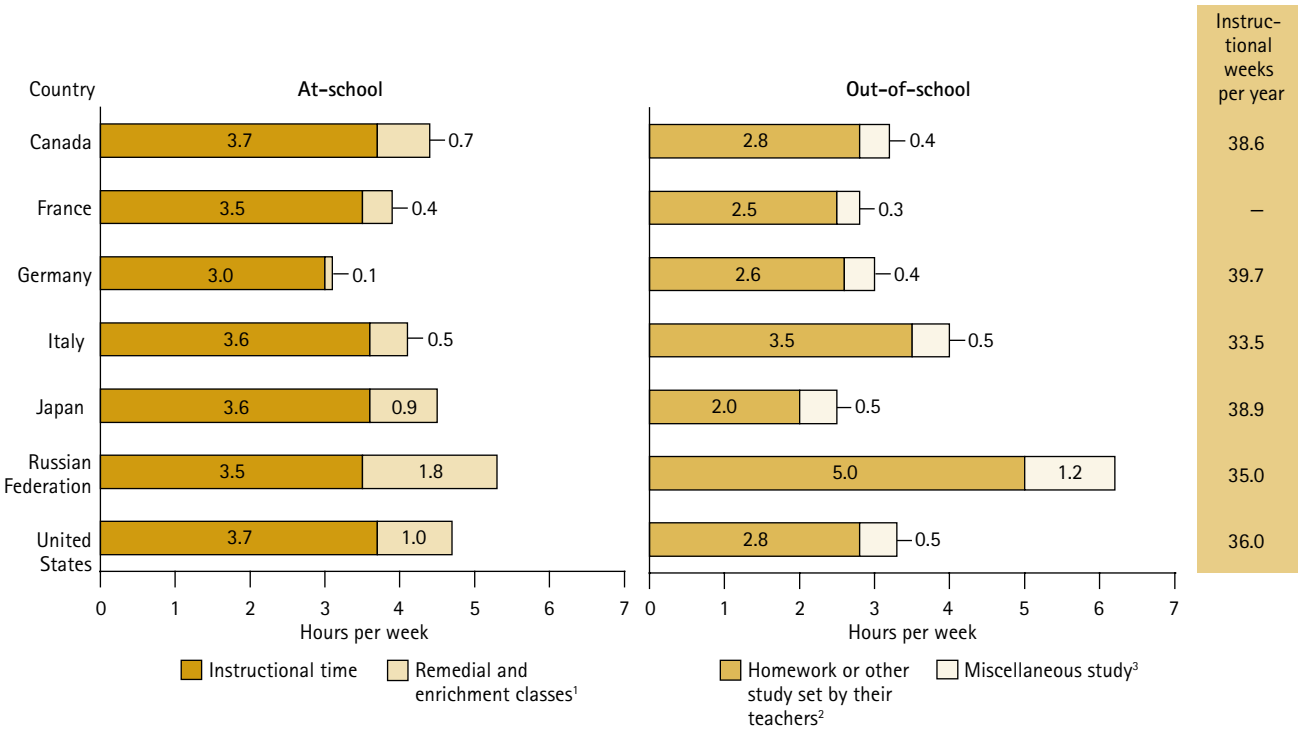
At-school time included (a) formal instructional time in the classroom (calculated by multiplying the average length of a class period reported in minutes by the number of class periods receiving mathematics instruction per week), (b) number of hours spent each week on remedial classes, and (c) number of hours spent each week on enrichment classes.

Out-of-school activities included number of hours spent each week on (a) homework or other study set by the mathematics teacher, (b) working with a mathematics tutor, (c) attending out-of-school mathematics classes, and (d) other mathematics activities (e.g., mathematics competitions and mathematics clubs) (out-of-school activities b, c, and d are grouped as miscellaneous study in figure 11).

The computations presented in the text are carried out using unrounded numbers; therefore, they may differ from computations made using the rounded numbers that appear in figure 11.

[12]Data on instructional weeks per year are not available for France. Due to low response rates, data for the United Kingdom are not shown at all in this indicator.

Figure 11. Average hours spent per week on mathematics learning in at-school and out-of-school settings as reported by 15-year-old students, and instructional weeks per year, by country: 2003




–Not available.

[1]Some item response rates by country are below 85 percent, with a range from 72 to 88 percent. For the composite variable (i.e., remedial and enrichment classes together as a single variable), response rates range from 70 to 83 percent across countries. Missing data have not been explicitly accounted for in the data.

[2]Item response rate for Canada is below 85 percent (i.e., 82 percent), and missing data have not been explicitly accounted for in the data.

[3]Some item response rates by country are below 85 percent, with a range from 69 to 90 percent. For the composite variable (i.e., miscellaneous study as a single variable; see general note below for the out-of-school activities that this consists of), response rates range from 66 to 88 percent across countries. Missing data have not been explicitly accounted for in the data.

NOTE: Miscellaneous study reported under out-of-school activities combines (1) working with a mathematics tutor, (2) attending out-of-school mathematics classes, and (3) other mathematics activities (e.g., mathematics competitions and mathematics clubs).

SOURCE: Organization for Economic Cooperation and Development (OECD). (2004). *Learning for Tomorrow's World, First Results From PISA 2003*, table 5.14. Paris: Author.